

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for transmitting and receiving high-frequency data signals over power transmission lines, comprising:
coupling and un-coupling high-frequency electrical data signals with a first power transmission line by inductance;
conditioning said coupled and un-coupled high-frequency electrical data signals; and
coupling and un-coupling high-frequency electrical data signals to a first end of a fiber-optic ~~isolator~~ cable using a light transducer ~~and a light pipe; and~~
wherein said fiber optic cable is configured to isolate power transmission line voltages that may be conducted to said fiber optic cable.
2. (Currently Amended) The method of claim ~~{e1}~~ 1, further comprising providing said inductance by positioning said first power transmission line inside a toroid shaped core having a plurality of windings.
3. (Currently Amended) The method of claim ~~{e2}~~ 2, further comprising preventing low frequency power line signal saturation of said core by forming said core with a magnetic material of sufficient permeability.
4. (Currently Amended) The method of claim ~~{e2}~~ 2, further comprising forming said core as two portions with a hinge therebetween to ease installation.
5. (Currently Amended) The method of claim ~~{e4}~~ 1, further comprising inductively providing power for said conditioning and said light transducer using a second toroid surrounding said first power transmission line and including a sufficient number of windings to inductively transfer desired power.
6. (Currently Amended) The method of claim ~~{e5}~~ 5, further comprising forming said second toroid as two portions and joining said portions together with a hinge.

7 (Currently Amended) The method of claim ~~{e1}~~ 1, further comprising coupling said fiber-optic ~~isolator~~ cable to an interface device for electronic data signal devices.

8. (Currently Amended) The method of claim ~~{e1}~~ 1, further comprising:
coupling and un-coupling light signals from a second end of said fiber-optic ~~isolator~~ cable using ~~a second light pipe and~~ a second light transducer for high-frequency electrical data signals;

conditioning said coupled and un-coupled high-frequency electrical data signals; and

coupling and un-coupling high-frequency electrical data signals with a second power transmission line by inductance.

9. (Currently Amended) The method of claim ~~{e8}~~ 8, further comprising providing a second inductive power source for at least said second light transducer.

10. (Currently Amended) The method of claim ~~{e1}~~ 1, further comprising providing said coupling, un-coupling and conditioning steps within a protected environment.

11. (Currently Amended) A device for transmitting and receiving high-frequency data signals over power transmission lines, comprising:

an inductor adjacent to a first power transmission line;

signal conditioning circuitry electrically connected to said inductor;

a light transducer electrically connected to said signal conditioning circuitry;

~~a light pipe adjacent to~~ fiber optic cable connected to said light transducer via a first end;

wherein said fiber optic cable is configured to isolate power transmission line voltages that may be conducted to said fiber optic cable;

~~a fiber-optic isolator connected to said light pipe; and~~

a power source for said signal conditioning circuitry and said light transducer.

12. (Currently Amended) The device of claim ~~{e14}~~ 11, wherein said inductor comprises a toroid shaped core having a plurality of windings and said

inductor is positioned such that said first power transmission line runs through a center of said core.

13. (Currently Amended) The device of claim ~~{e12}~~ 12, wherein said core comprises a magnetic material of sufficient permeability to prevent low frequency power line signal saturation of said core.

14. (Currently Amended) The device of claim ~~{e12}~~ 12, wherein said toroid shaped core comprises two portions joined together with a hinge.

15. (Currently Amended) The device of claim ~~{e11}~~ 11, wherein said power source comprises a second toroid surrounding said first power transmission line and including a sufficient number of windings to inductively transfer desired power.

16. (Currently Amended) The device of claim ~~{e15}~~ 15, wherein said second toroid comprises two portions joined together with a hinge.

17. (Currently Amended) The device of claim ~~{e14}~~ 11, further comprising an interface device coupled to said fiber-optic ~~isolator~~ cable; said interface device including means to interface with digital appliances.

18. (Currently Amended) The device of claim ~~{e11}~~ 11, further comprising:
~~a second light pipe adjacent to an opposite end of said fiber-optic isolator;~~
~~a second light transducer connected to said second light pipe~~ connected to a second end of said fiber optic cable and electrically connected to a second set of signal conditioning circuitry;

said second set of signal conditioning circuitry electrically connected to a second inductor; and

said second inductor adjacent to a second power transmission line.

19. (Currently Amended) The device of claim ~~{e18}~~ 11, further comprising a second power source for said second set of signal conditioning circuitry and said second light transducer.

20. (Currently Amended) The device of claim ~~{e11}~~ 11, further comprising a weather-proof enclosure for at least said inductor, said signal conditioning circuitry, and said a light transducer, ~~and said light pipe~~.